KOVAL', E.Z.

Fungus species of the genus Cordyceps Fr. hitherto unknown in the flora of the U.S.S.R. Ukr. bot. zhur. 18 no.1:99-103 '61. (MIRA 14:3)

1. Institut botaniki AN USSR, otdel mikologii.
(Kedrovaya Pad' Preserve—Fungi, Pathogenic)
(Insects, Injurious and beneficial—Biological control)

KOVAL', E.Z.

New species of fungi from the Maritime Territory. Ukr. bot. zhur. 18 no. 2:73-80 '61. (MIRA 14:5)

1. Institut botaniki AN USSR, otdel mikologii.
(Maritime Territory—Fungi)

KOVAL', E.Z.

Some species and forms of fungi new for the flora of the U.S.S.R. Ukr. bot. zhur. 18 no.3:87-91 '61. (MIRA 14:12)

1. Institut botaniki AN USSR, Otdel mikologii.
(Fungi)

KOVAL', E.Z.

Interesting mycological finds in the Crimean Gamo Preserve.
Ukr. bot. zhur. 19 no.2:86-87 '62. (MIRA 15:6)

1. Institut botaniki AN USSR, otdel mikologii.
(Crimea--Fungi, Phytopathogenic)

KOVAL', E.Z.

New species of fungi from the Kurile Islands. Bot. mat. Otd. spor. rast. 15:88-90 Ja '62. (MIRA 15:10)
(Kurile Islands—Fungi)

KOVAL', E.Z.

New species of fungi from the southern part of the Maritime Territory. Bot. mat. Otd. spor. rast. 16:99-101 '63.

Species of the genus Leotia Fr. from the southern part of the Maritime Territory. 101-103

Entomophilous fungi of the class Deuteromycetes from the southern part of the Maritime Territory. 104-108 (MIRA 16:10)

KOVAL', E.Z.

Microsphaera menispermi Howe in the Maritime Territory. Bot. mat. Otd. spor. rast. 14:133 Ja'61.

New species of Cordyceps from the southern Maritime Territory. Ibid.:158-164 (MIRA 17:2)

ABLAKATOVA, A.A.; KOVAL', E.Z.

New species of fungi on lianas in the Mari[redacted]tory.
Ukr. bot. zhur. 20 no.6:92-94 '63. (MIRA 17:2)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR, laboratoriya sporovykh rasteniy, i Institut botaniki AN UkrSSR, laboratoriya mikologii.

ABLAKATOVA, A.A.; KOVAL', E.Z.

Fungi of Actinidia and Schizandra in the Maritime Territory.
Bot. mat. Otd. spor. rast. 14:150-158 Ja'61. (MIRA 17:2)

BUNKINA, I.A.; KOVAL', E.Z.

New species of fungi from the Far East. Ukr. bot. zhur. 20 no.4: 94-97 '63. (MIRA 17:4)

1. Dal'nevostochnyy gosudarstvennyy universitet, kafedra botaniki, i Laboratoriya mikologii Instituta botaniki AN UkrSSR.

KOVAL', E.Z.

Study of mycoflora of the Kedrovaya Pad' Preserve (Maritime Territory). Bot. zhur. 48 no.11:1701-1705 N '63. (MIRA 17:4)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR, laboratoriya sporovykh rasteniy, Vladivostok.

KOVAL', E.Z.

Data on the study of mycophilous fungi in the Ukraine. Ukr. bot. zhur. 21 no.5:58-64 '64. (MIRA 18:2)

1. Laboratoriya mikologii Instituta botaniki AN UkrSSR.

BILAY, V.I.; PIDOPLICHKO, N.N. [Pidoplichko, M.M.]; GUTYRYA, V.S. [Hutyria, V.S.]; BUKHALO, A.S.; V'YUN, A.A. [V'iun, H.A.]; GALICH, P.N. [Halych, P.M.]; KOVAL', E.Z.; MASUMYAN, V.Ya.; MIL'KO, A.A. [Mil'ko, O.O.]

Petroleum hydrocarbons as a source of carbon for microscopic mycelial soil fungi. Mikrobiol. zhur. 27 no.2:3-10 '65. (MIRA 18:5)

1. Institut mikrobiologii i virusologii AN UkrSSR i Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR.

KOVAL', [illegible]

Data on the study of entomopathogenic fungi in the Ukraine. Ukr. bot. zhur. 22 no.5:59-61 '65.

(MIRA 18:10)

1. Institut mikrobiologii i virusologii AN UkrSSR.

KOVAL', E.Z.; SAVCHENKO, Ye.N. [Savchenko, IE.N.]

New entomophilous fungi on crane flies of the families Tipulidae and Limoniidae in the Ukraine. Dop. AN URSR no.11:1645-1647 '65. (MIRA 19:1)

1. Institut mikrobiologii AN UkrSSR i Institut zoologii AN UkrSSR.
Submitted September 1, 1964.

1. KOVAL', F.
2. USSR (600)
4. Television--Transmitters and Transmission
7. Shukhov tower, Sov. sviaz., 3, No. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

KOVAL', F.P., inzhener.

Improving a class 22-A universal machine. Leg.prom. 14 no.9:46-47 S '54. (MLRA 7:9)
(Sewing machines)

KUVAL', F.P., inzhener.

Shortcomings of sewing machines. Leg.prom. 16 no.5:46 My '56. (MLRA 9:8)

(Sewing machines)

KOVAL', F.S.

USSR/Cultivated Plants - Fruits. Berries.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44285

Author : Koval', F.S.
Inst :
Title : The Achievements of Moldavian Horticulturists Viticulturists and Olericulturists.

Orig Pub : Sad i ogorod, 1957, No 10, 27-34.

Abstract : No abstract.

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PASHCHENKO, V.Ya.; SISETSKIY, A.G.[Sisets'kyi, A.H.]; SIZONENKO, G.S. [Syzonenko, H.S.]; DASHKEVICH, Ya.R.[Dashkevych, IA.R.]; KOVAL'CHAK, G.I.[Koval'chak, H.I.]; KOVAL', F.T., red.; KRIP'YAKEVICH, I.P.[Kryp'iakevych, I.P.], red.; CHUGAYOV, V.P. [Chuhaiov, V.P.], red.; DERKACH, I., red.; BURKATOVSKAYA, TS. [Burkatovs'ka, TS], tekhn. red.

[Condition of Lvov workers, 1917-1939] Stanovyshche trudiashchykh L'vova, 1917-1939; dokumenty ta materialy. L'viv, Knyzhkovo-zhurnal'ne vyd-vo, 1961. 443 p. (MIRA 15:11)

1. Ukraine. Arkhivnoye upravleniye.
(Lvov--Labor and laboring classes)

KLAUST:NG, Ye.A.; LEYKIN, I.M.; SABIYEV, M.P.; IMSHENETSKIY, V.I.; CHERNER, M.I.; Prinimali uchastiye: PIKULIN, S.A.; KONSTANTINOVA, T.A.; KOVAL', E.Ya.; KRYZHEPOL'SKAYA, S.P.; SHUL'GA, Ye.A.; NIKITIN, V.N.; DOROFEYEVA, A.N.

From practices of producing 1X3 steel at the Kommunarskiy Metallurgical Plant. Stal' 22 no.2:155-159 F '62. (MIRA 15:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i Kommunarskiy metallurgicheskiy zavod.
(Kommunarskiy--Steel alloys--Metallurgy)
(Rolling (Metalwork))

IMSHENETSKIY, V.I., inzh.; KOVAL', F.Ya., inzh.; PIKULIN, S.A., inzh.

Mechanical properties of hot-rolled and normalized 09G2 sheet steel. Stal' 22 no.7:643-647 Jl '62. (MIRA 15:7)

1. Kommunarskiy metallurgicheskiy zavod.
(Sheet [redacted]—Testing)

KOVAL', G.A.; PAVLENKO, N.I.; FEDOROVA, Ye.G.

Prospects for using plastics in building mining machinery.
Sbor. nauch. trud. KGRI no.13:77-85 '62. (MIRA 16:8)

(Mining machinery—Equipment and supplies)
(Plastics—Testing)

KOVAL', G.A.; FEDOSEOVA, Ye. G.

Laboratory tests of parts made of capron. Sbor. nauch. trud. KGRI no.19:3-7 '62. (MIRA 16:5)

(Mining machinery—Testing) (Nylon)
(Metallurgical plants—Equipment and supplies)

KOVAL', G.A.; FEDOROVA, Ye.G.

Improving a die casting apparatus and designing a unit for testing parts made of plastics. Sbor. nauch. trud. KGRI no.19:7-11 '62.
(MIRA 16:5)

(Die casting)
(Mining machinery--Testing)
(Nylon)

KOVAL', G.A.; PAVLENKO, N.I.; FEDOROVA, Ye.G.

Industrial tests of parts of mining and metallurgical machinery made of capron. Sbor. nauch. trud. KGRI no.19:43-46 '62. (MIRA 16:5)

(Mining machinery—Testing)
(Metallurgical plants—Equipment and supplies)
(Nylon)

BAGAYEV, I.A., dotsent, kand. tekhn. nauk; KOVAL', G.L., dotsent, kand. tekhn. nauk

Kinds of damage and the causes of premature wear-out of parts of quick-blow rock drills. Gor. mashch. trud. KGRY no.10: 229-229 '61 (MIA 17:8)

Durability research [illegible] the lengthening [illegible] the service life of quick-blow rock drill parts. Ibid.:230-231

KOVAL', O.G., inzh.; KORSHUNOV, B.M.; MOROZOV, V.V., inzh.

Work practice of the Krivoy Rog (Donets Basin) Central Coal Preparation Plant. Obog. i brik.ugl. no.10:50-53 '59.
(MIRA 13:9)
(Donets Basin--Coal preparation)

CHUB, V.F.; KOVAL', G.L.

Testing the PBS-8 boring unit. Ugol' Ukr. 4 no.3:44-45 Mr '60.
(MIRA 13:6)

(Boring machinery--Testing)

CHUB, V.F., inzh., KOVAL', G.L., inzh.

The PBS-8M universal drilling unit. Mekh.i avtom.proizv. 14 no.5:38-40 My '60. (MIRA 14:2)

(Rock drills)

GOL'TSBERG, I.M.; KOVAL', G.L.; KLEMESHOV, G.A.

Rapid photocolorimetric method of determining vanadium in iron ores, ferrous metals, and slags. Sbor.trud. UNIIM no.11:387-394 '65. (MIRA 18:11)

KONKIN, V.D., kand.khimicheskikh nauk; KOVAL', G.L., inzh.

Rapid volumetric determination of silicic acid in slags. Trudy Ukr. nauch.-issl. inst. met. no.7:297-300 '61. (MIRA 14:11)
(Slag--Analysis) (Silica--Analysis)

KOVAL', G.L.; KONKIN, V.D., kand. khim. nauk; KLIMESHOV, G.A.

Photocolorimetric method of determining arsenic in iron ores and products of their transformation. Sbor. trud. UNIIM no.9: 460-463 '64 (MIRA 18:1)

KOVAL', G.M., inzhener.

Some problems of pusher-tugboat design. Sudostroenie 23 no.2:14-20 F '57. (MLRA 10:5)

(Tugboats)

KOVAL, G. T.

"Eclipsing Variable TT Lyrae"
Izv. Astron. Observ. Odessk. Univ., 3, 1953, pp 287-291

The variable TT Lyr was studied from plates of Odessa sky service. Light curves were plotted using photographic and visual observations. Estimates were made by the Blazhko-Neyland method. The secondary minimum corresponds to phase 0.464. Mean color index was found $0^m.1$. A map of reference stars is given. (RZhAstr, No.11, 1954)

SO: W-31187, 8 Mar 55

KOVAL, G.T.

Studying the period of DF Cygni. Izv.Astron.obser. 3:313-318 '53.
(Stars, Variable) (MLRA 7:11)

KOVAL', G.

Investigating the period of DF Cygni. Astron. tsir. no.136:18-19 Mr '53. (MLRA 6:6)

1. Odesskaya astronomicheskaya observatoriya. (Stars, Variable)

KOVAL', G.T.

AP Hercules. Per. zvezdy 10 no.5:318-322 '55. (MLRA 9:9)

1. Odesskaya astronomicheskaya observatoriya.
(Stars, Variable)

KOVAL', G.

Maxima and minima of brilliance of Z, RT, UR, and SX Cygni. Astron. tsir. no.166:22-23 Ja '56. (MLRA 9:7)

1.Odesskaya astronomicheskaya observatoriya .
(Stars, Variable)

KOVAL', G.T.

Observations of four Mira Ceti-type variables. Per.zvezdy 12 no.2:108-116 N '57. (MIRA 13:4)

1. Odesskaya astronomicheskaya observatoriya.
(Stars, Variable)

KOVAL', G.T.

Observations of BL and EB Herculis. Per.zvezdy 12 no.2:132-136 N '57. (MIRA 13:4)

1. Odesskaya astronomicheskaya observatoriya.
(Stars, Variable)

KOVAL', G. YU.

KOVAL', G.YU. -- "The Effect of Physical Activities on the Heart of People of Various Age Groups." Central Sci Res X-Ray and Radiological Inst, Min Public Health USSR, Leningrad, 1956. (Dissertation for the Degree of Candidate in MEDICAL SCIENCES)

SO: KNIZHNAYA LETOPIS' (Book Register) No 42, October 1956, Moscow

USSR/Human and Animal Physiology. Blood Circulation. General Problems. T-5

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55552.

Author : Koval', G. Yu.
Inst :
Title : The Roentgenokymographic Study of the Effect of Physical Strain Upon the Activity of the Heart in Adults.

Orig Pub: Fiziol. zh., 1956, 2, No 6, 45-50.

Abstract: The heart roentgenokymogram was taken of 34 untrained 20-46 years old men during the first, third and seventh minutes of standard exercises, upon a veloergometer, and then also during the fourth minute of the rest period. A favorable reaction is expressed by an initial enlargement of the heart, followed by a reduction in size during further exercises, as well as by an

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KOVAL', G.Yu.

Peculiarities of cardiac activity under stress related to age according to roentgen kymographic data. Vrach.delo no.9:917-919 S '57. (MLRA 10:9)

1. Kafedra rentgenologii i radiologii (zav. - prof. A.A.Gorodetskiy Kiyevskogo instituta usovershenstvovaniya vrachey i otdel biofiziki (zav. - prof. A.A.Gorodetskiy) Instituta fiziologii im. A.A.Bogomol-tsa AN USSR.
(HEART--RADIOGRAPHY)

KOVAL', G.Yu.

Contractile and tonic function of the heart in patients subjected to the action of ionizing radiation. Kaz. med. zhur. no.6:10-11 N-D '61. (MIRA 15:2)

1. Kafedra rentgenologii (zav. - prof. A.Ye.Rubasheva) Kiyevskogo instituta usovershenstvovaniya vrachey.
(HEART--RADIOGRAPHY)

KOVAL', I.A.

Introduction of modern methods for cooking jams in all canning factories. Kons. i ov. prom. 16 no. 6:12-13 Je '61. (MIRA 14:8)

1. Krasnodarskiy sovnarkhoz.
(Krasnodar Territory--Jam)

KOVAL', G.Yu. (Kiyev, ul. Vladimirskaya, d.48a, kv.7)

Marble disease. Klin.khir. no.12:68-69 D '62. (MIRA 16:2)

1. Kafedra rentgenologii (zav. - prof. A.Ye. Rubasheva) Kiyevskogo instituta usovershenstvovaniya vrachey.
(BONES--DISEASES)

KOVAL', I.A.

The collective of Adyge Canning Combine struggles successfully for the fulfillment of the seven-year plan. Kons.i ov.prom. 17 no.7:6-7 Jl '62. (MIRA 15:6)

1. Krasnodarskiy sovnarkhoz.
(Adyge Autonomous Province—Canning industry—Labor productivity)

KOVAL', I.A.

New type of canned "egetable ragout". Kons. i ov.prom. 18 no.4:20-21 Ap '63. (MIRA 16:3)

1. Upravleniye pishchevoy promyshlennosti Severo-Kavkazskogo sovet narodnogo khozyaystva.

(Vegetables, Canned)

KOVAL', I.A.

Reduce the expenditure of labor per unit of production output. Kons. i ov.prom. 19 no.1:33-34 Ja '64. (MIRA 17:2)

1. Upravleniye konservnoy promyshlennosti Severo-Kavkazskogo soveta narodnogo khozyaystva.

KOVAL I-A.

VAKHTIL', V.Yu.; KOVAL', I.A.; PESTRYAKOV, A.I., redaktor; BALLOD, A.I., tekhnicheskiy redaktor.

[Engine for tractor-drawn combines] Dvigatel' dlia pritsepnykh kombainov. Moskva, Gos. izd-vo sel'skokhoz. lit-ry, 1954. 199 p. (MLRA 7:11)

(Combines (Agricultural machinery)) (Gas and oil engines)

KOVAL', I.A., inzhener.

Remarks on the system of tolerances and fittings. Standartizatsiia no.4:66-67 Jl-Ag '54. (MLRA 8:2)

1. Khar'kovskiy zavod "Serp i Molot".
(Standards, Engineering)

KOVAL', I.A., inzhener.

Building combine engines with ignition by compression. Sel'khozmashina no.6:15-20 Je '54. (MLRA 7:6)

1. Zavod 'Serp i molot'. (Gas and oil engines)

KOVAL, I.A.

25(2) SOV/1636

PHASE I BOOK EXPLOITATION

Novye mashiny; sbornik statey o novykh mashinakh, otpushchennykh zavodami na Khar'kovskikh predpriyatiyakh v period 1956-1958 gg. (New Machines; Collection of Articles on the Machines, Motors, and Apparatus Made in Khar'kov Plants From 1956 to 1958) /Khar'kov/ Khar'kovskoye oblastnoye izd-vo, 1958. 226 p. 4,000 copies printed.

Compilers: P.I. Zaagal, Scientific Eds.: V.A. Bulgakov (Chief Engineer, Khar'kov Electromechanical Plant), S.A. Terebilov (Candidate of Technical Sciences, Turbine Plant, and Corresponding Member, Ukrainian SSR Academy of Sciences)); Ed.: Ya.Ye. Donskoy; Tech. Ed.: [illegible].

PURPOSE: This collection of articles is to acquaint the reader with the latest developments and attainments of the Khar'kov machinery manufacturing industry during the 1956-58 period.

COVERAGE: The book, prepared in the form of a descriptive catalog, presents the latest information on machinery and equipment manufactured by Khar'kov plants from 1956-58. A detailed description is given of the following machines and equipment: steam turbines, crawler chassis, diesel engines, diesel locomotives, machine tools including unit machinery, electric power generators, road building machinery, electric photographs tools, conveyers, and electronic instruments. Numerous photographs and electrical and electronic equipment are included in the of the above-listed machinery and equipment. There are no references. No personalities are mentioned.

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New Machines; Collection of Articles (Cont.) SOV/1636

Card 4/6

KOVAL', I.A.

All-purpose SMD Diesel engine. Mekh. sil'.hosp. 9 no. 6:10-11 Je '58. (MIRA 11:7)

1. Golovnii konstruktor Khar'kivskogo zavodu "Serp i molot." (Diesel engine)

KOVAL', I.A

PHASE I BOOK EXPLOITATION SOV/5253

Nauchno-tekhnicheskaya konferentsiya po razvitiyu proizvoditel'nykh sil Khar'kovskogo ekonomicheskogo administrativnogo rayona, 1958.

Voprosy razhinostroyeniya; trudy konferentsii... (Problems of Machine Building: Transactions of the Scientific Technological Conference on the Development of Productive Forces of the Khar'kov Economic Administrative Region) no. 3. Kiyev, Izd-vo AN UkrSSR, 1960. 182 p. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Sovet po izucheniyu proizvoditel'nykh sil UkrSSR.

Editorial Board: Resp. Ed.: A.A. Vasilenko, Academician of the Academy of Sciences UkrSSR; A.A. Gorokhov, Corresponding Member, Academy of Sciences UkrSSR; I.V. Postnikov, Doctor of Technical Sciences; S.K. Kutsenko; A.I. Abramenko, Candidate of Technical Sciences; G.M. Davydov, Candidate of Economical Sciences; Ed. of Publishing House: S.D. Lopkiy; Tech. Ed.: R.A. Suniy.

PURPOSE: This collection of articles is intended for scientific personnel, engineers, technicians, Gornarkhoz workers, and planning organizations.

COVERAGE: The articles deal with problems in technology and techniques in the manufacture of engines, hydraulic turbines, diesel locomotives, tractors, combines, electrical machinery, etc. Considerable attention is given to the following: the development of various types of equipment used for automation in the coal industry; equipment development for the production and use of rectifiers; the development of new accessories for [illegible] and die forging parameters; and the introduction of advanced methods into foundry and die forging. No personalities are mentioned. References accompany each of the articles. There are 20 references: 16 Soviet, 2 German, 1 French, and 1 English.

KOVAL', I.A., inzh.

Measures for improving the service reliability of SMD-7 engines.
Trakt. i sel'khozmash. 30 no.7:11-13 Jl '60. (MIRA 13:10)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dvigatelyam, Kharkovskiy zavod "Serp i molot".
(Diesel engines)

KOVAL', I.A.

The family of SMD diesels. Trakt.i sel'khozmash. 31 no.2:1-3 F '61. (MIRA 14:7)

1. Glavnyy konstruktor Gosudarstvennogo spetsial'nogo konstruktorskogo byuro po dvigatelyam zavoda "Serp i molot".
(Diesel engines)

KOVAL', I.A.; YEREMENKO, P.S.; DIIENKO, A.M.

The standard SMD-14 diesel. Trakt. i sel'khozmash. 32 no.7:1-4 Jl '62.
(MIRA 15:7)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dvigatelyam.
(Tractors) (Diesel engines)

KOVAL', I.A.; VAKHTEL', V.Yu.; YEREMENKO, B.S.; CHICHEVA, L.I., red.; SOKOLOVA, N.N., tekhn. red.

[Standardized diesel engine for tractors and combines]Unifitsirovannyi dizel' dlia traktorov i kombainov. Moskva, Sel'khozizdat, 1962. 222 p. (MIRA 16:2)
(Tractors--Engines)
(Combines (Agricultural machinery))--Engines)

KASHUBA, B.P., red.; KOVAL', I.A., red.; KASPEROVICH, N.S., inzh., red.izd-va; EL'KIND, V.D., tekhn. red.

[Catalog of parts for the T-74 tractor] Katalog detalei traktora T-74. Moskva, Mashgiz, 1963. 166 p.
(MIRA 16:12)

1. Kharkivs'kyi traktornyi zavod.
(Tractors--Catalogs)

KOVAL, I.A.

The new SMD diesels for tractors and combines. Trakt. i sel'khozmash. 33 no.9:3 S '63. (MIRA 16:10)

1. Glavnyy konstruktor Gosudarstvennogo spetsial'nogo konstruktorskogo byuro po dvigatelyam.
(Diesel engines)

KOVAL', I.A., inzh.; VAKHTEL', V.Yu., inzh.

Reliability and durability of the SMD-14 tractor diesel engine. Trakt. i sel'khozmash. no.6:1-4 Je'64 (MIRA 17:7)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dvigatelyam.

KASHUBA, B.P.; KOVAL', I.A.; VAKHTEL', V.Yu.; DONDE, V.N.; YEREMENKO, B.S.; ZELIKOVSKIY, L.M.; KARMAZIN, E.I.; LINCHEVSKIY, V.V.; OGIY, G.Ye.; SEPITYY, V.T.; PESTRYAKOV, A.I., red.

[The T-74 tractor; its design, operation and maintenance] Traktor T-74; konstruktsiia, ekspluatatsiia, ukhod. Moskva, Kolos, 1964. 204 p. (MIRA 18:4)

KOVAL', I.A., inzh.; GRODZIYEVSKIY, V.I., inzh.; DIDENKO, A.M., inzh.; SIMSON, A.E., kand. tekhn. nauk; KHARCHENKO, A.I., inzh.

Studying the working process of the SMD-18 diesel engine with turbocharger. Trakt. i sel'khozmash. no.8:5-8 Ag '64.
(MIRA 17:11)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dvigatelyam (for Didenko). 2. Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta imeni S.M. Kirova (for Kharchenko).

KOVAL', I.A., red.

[Catalog of parts of the SMD-14 engine and its modifications] Katalog detalei dvigatelia SMD-14 i ego modifikatsii. Moskva, Mashinostroenie, 1965. 138 p.
(MIRA 18:10)

1. Khar'kovskiy motorostroitel'nyy zavod "Serp i molot."

L 38431-66 EWT(m)/T IJ

ACC NR: AP6019034 (A) SOURCE CODE: UR/0343/66/000/002/0001/0002

AUTHOR: Koval', I. A. (Chief designer)

ORG: GSKB on engines (GSKB po dvigatelyam) "Sickle and Hammer" plant (zavod "Serp i Molot")

TITLE: Increased reliability and endurance of SMD-14 diesel

SOURCE: Traktory i sel'khozmashiny, no. 2, 1966, 1-2

TOPIC TAGS: diesel engine, machine industry, / SMD-14 diesel engine, AO-20 alloy, ACM-alloy, AL-25 alloy

ABSTRACT: Various tests performed on SMD-14 diesel engines by the above-mentioned organizations are discussed and performance results under operational conditions are analyzed. As a result of investigations, it is recommended that crankshafts be made of high-quality cast-iron instead of steel and be counterbalanced properly in order to reduce unit pressures from 44 to 35 kg/sq cm. The use of AO-20 alloy in place of ACM alloy for bearing bushings is also recommended in order to get a 40-pct increase in allowable bearing pressures. Some measures for improving the design and performance of cylinder heads are mentioned (bolt tightening, elimination of thermal and mechanical stresses, and

UDC: 621.431.73.004.17

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ACC NR: AM6036737 (A) Monograph UR/

Koval', Ivan Andreyevich; Vakhtel', Viktor Yul'yevich; Yeremenko, Boris Stepanovich; Didenko, Aleksandr Markovich

Investigation and development of diesel engines (Issledovaniye i dovodka dizeley) Moscow, Izd-vo "Mashinostroyeniye", 66. 167 p. illus., biblio. 2,000 copies printed.

TOPIC TAGS: diesel engine, diesel engine design, power plant, mechanical engineering/ SMD-14 diesel

PURPOSE AND COVERAGE: This book is intended for engineering and technical personnel engaged in the design, testing, and operation of diesel engines. The experience of the design staff in developing and modifying the most popular Soviet diesel engine, the SMD-14, is presented. The operation of the diesel engine, and the resulting loads, stresses, and vibrations in it and its components, are analysed, particularly from the viewpoint of durability. Common defects found in diesel engines and methods of eliminating them are treated in detail. Prospects for increasing the power and economy of diesel engines are examined. There are 23 references, 21 of which are Soviet.

Card 1/2 UDC: NONE

ACC NR: AM6036737

TABLE OF CONTENTS [abridged]:

SUB CODE: 21/ SUBM DATE: 19Feb66/ ORIG REF: 021/ OTH REF: 002

Card 2/2

during operation on diesel fuel and gasoline

SOURCE: IVUZ. Mashinostroyeniye, no. 9, 1966, 103-107

TOPIC [illegible] engine, tractor, engine fuel system, diesel fuel, gasoline

ABSTRACT: The authors study the effect of two-phase fuel input on the [illegible] combustion process and on the indicated characteristics of diesel engines as a basis for developing multifuel engines. A single-cylinder section of the SMD-14N tractor engine was studied with operation on diesel fuel and A-66 gasoline using two fuel pumps so that the fuel may be fed into the combustion chamber or intake accumulator in any phase with respect to TDC. Fuel feed into the intake accumulator was fixed to give constant delivery at a crankshaft speed of 178 rad/sec. With a variation in load-

UDC: 621.436

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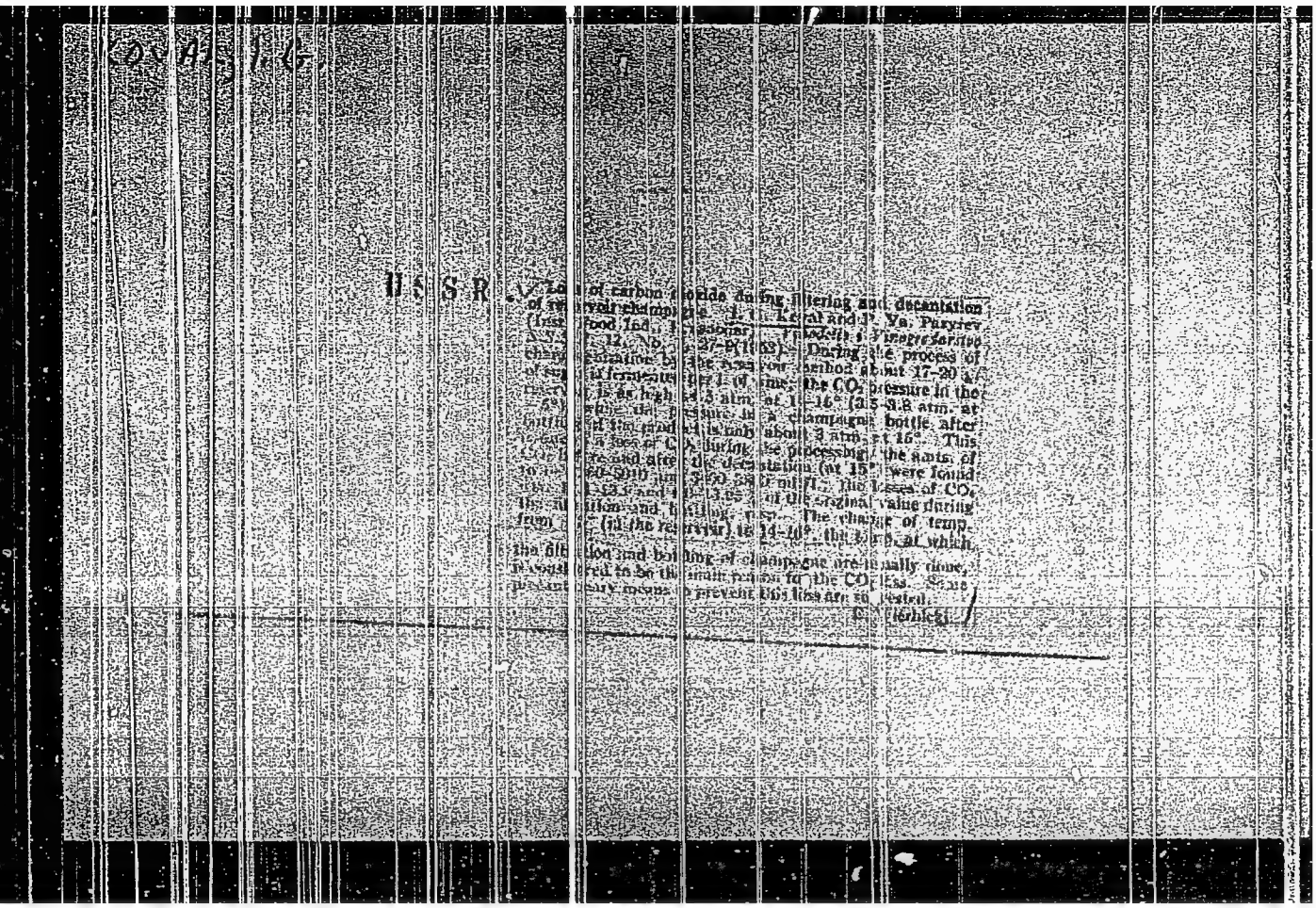
ACC NR: AP7005232

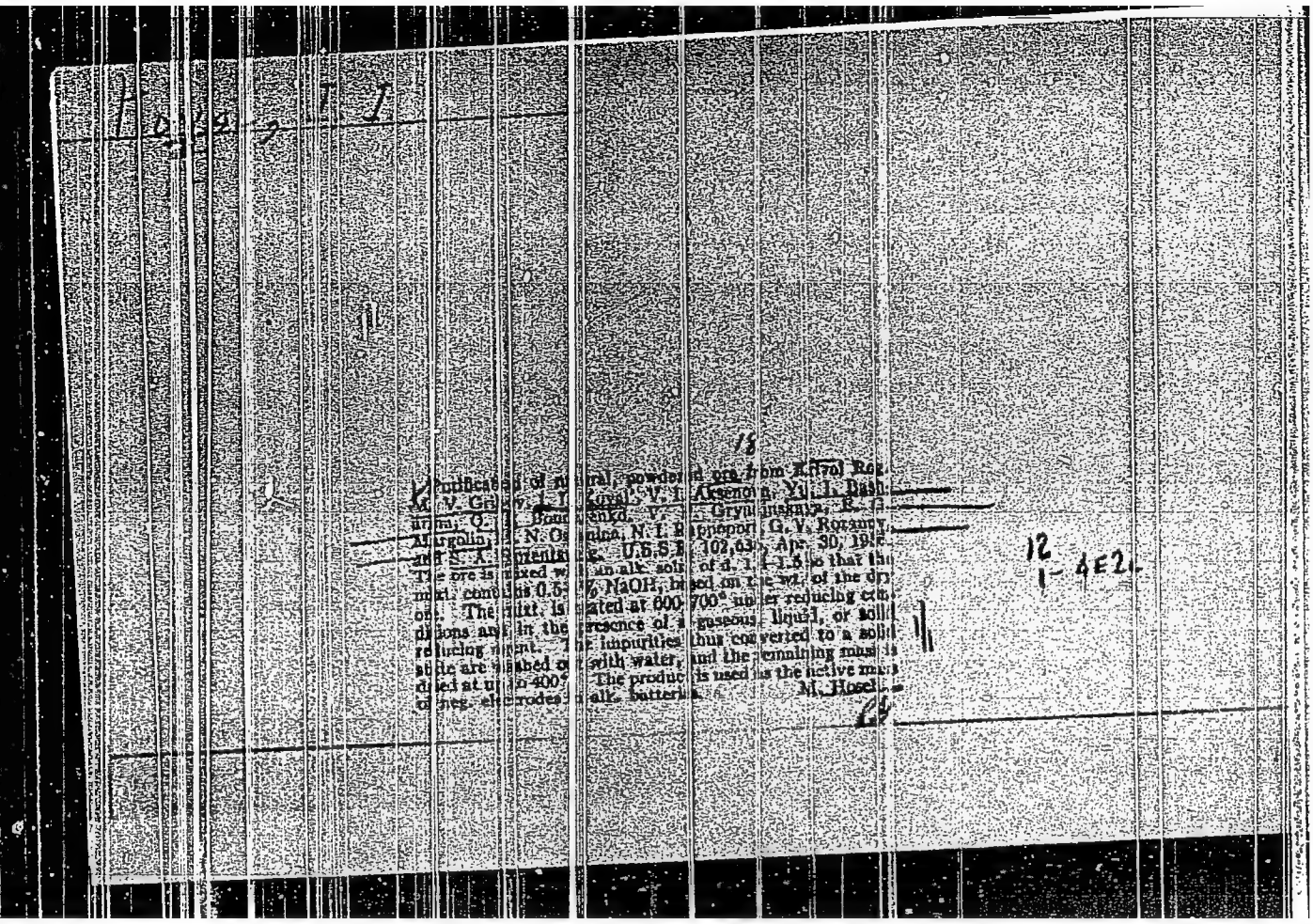
ing at constant crankshaft velocity, the relative quantity of additional fuel ϕ was varied by changing the quantity of primary fuel fed into the combustion chamber: $\phi=G_{add}/(G_{rel}+G_{add})100\%$. It was found that if small quantities of additional fuel are fed into the intake accumulator (ϕ=10-15% for diesel fuel and 15-20% for gasoline) efficiency is not adversely affected under heavy loading by a considerable reduction in the rigidity of engine operation (the pressure buildup rate may be reduced to $2\cdot10^5$-$3\cdot10^5$ N/m^2·deg with operation on diesel fuel and to $8\cdot10^5$-$9\cdot10^5$ N/m^2·deg with operation on gasoline). The use of composite fuel feed reduces maximum combustion pressure by $2\cdot10^5$-$4\cdot10^5$ N/m^2. The results of this study indicate the theoretical possibility for using fuel with a low cetane number to achieve economic indices presently realizable only with operation on fuel with a high cetane number. Orig. art. has: 4 figures.

SUB CODE: 21/ SUBM DATE: 5Nov65/ ORIG REF: 04/ OTH REF: 01

Card 2/2



USSR



KOVAL', I.

USSR / Soil Science. Mineral Fertilizers. J-4

Abs Jour: Ref Zhur-Biol., No 8, 1958, 34416.

Author : Kalaykov, G., Shapiro, S., Koval', I., Sochko, A.
Inst : Agrobiological Experiment Station of the Tyumen Pedagogical Institute.
Title : Humates of Sodium - Valuable Fertilizer for Siberia.

Orig Pub: S. kh. Sibiri, 1957, No 4, 55-58.

Abstract: On weak, lixiviated black earth, the Agrobiological Experiment Station of the Tyumen Pedagogical Institute conducted experiments with corn - sprayed with 0.001% solution of humate of sodium - at three fixed dates: May 25th, June 10th and July 7th. Only after the third spraying, the beneficial effect of the humates on the vegetative part of the plant was established as follows: the l

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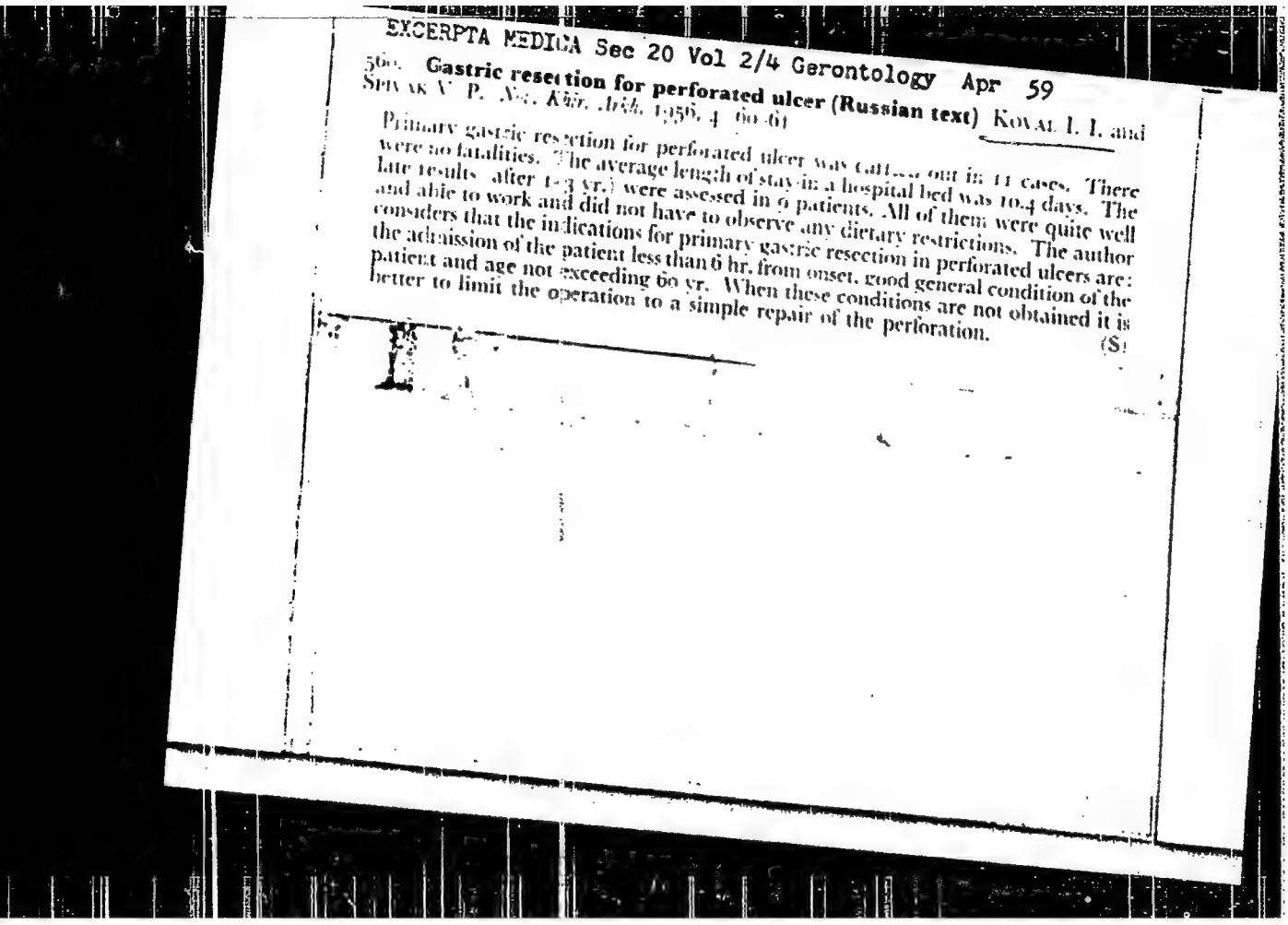


EXCERPTA MEDICA Sec 20 Vol 2/4 Gerontology Apr 59

566. **Gastric resection for perforated ulcer (Russian text)** KOVAL I. I. and SPIVAK V. P. *Vrach. Delo, Kiev.* 1956, 4 60-61

Primary gastric resection for perforated ulcer was carried out in 41 cases. There were no fatalities. The average length of stay in a hospital bed was 10.4 days. The late results (after 1-3 yr.) were assessed in 9 patients. All of them were quite well and able to work and did not have to observe any dietary restrictions. The author considers that the indications for primary gastric resection in perforated ulcers are: the admission of the patient less than 6 hr. from onset, good general condition of the patient and age not exceeding 60 yr. When these conditions are not obtained it is better to limit the operation to a simple repair of the perforation. (S)

KOVAL', I. I.

Treatment of suburgual hematomas. Ortop. travm. i protez. 19 no.3:69-70 My-Je '58 (MIRA 11:7)

1. Iz khirurgicheskogo otdeleniya (zav. - I.I. Koval') Dneprovetrovskoy 14-y gorodskoy bol'nitsy (glavnyy vrach - P.M. Limanskaya).
(FINGERS--TUMORS)
(TOES--TUMORS)

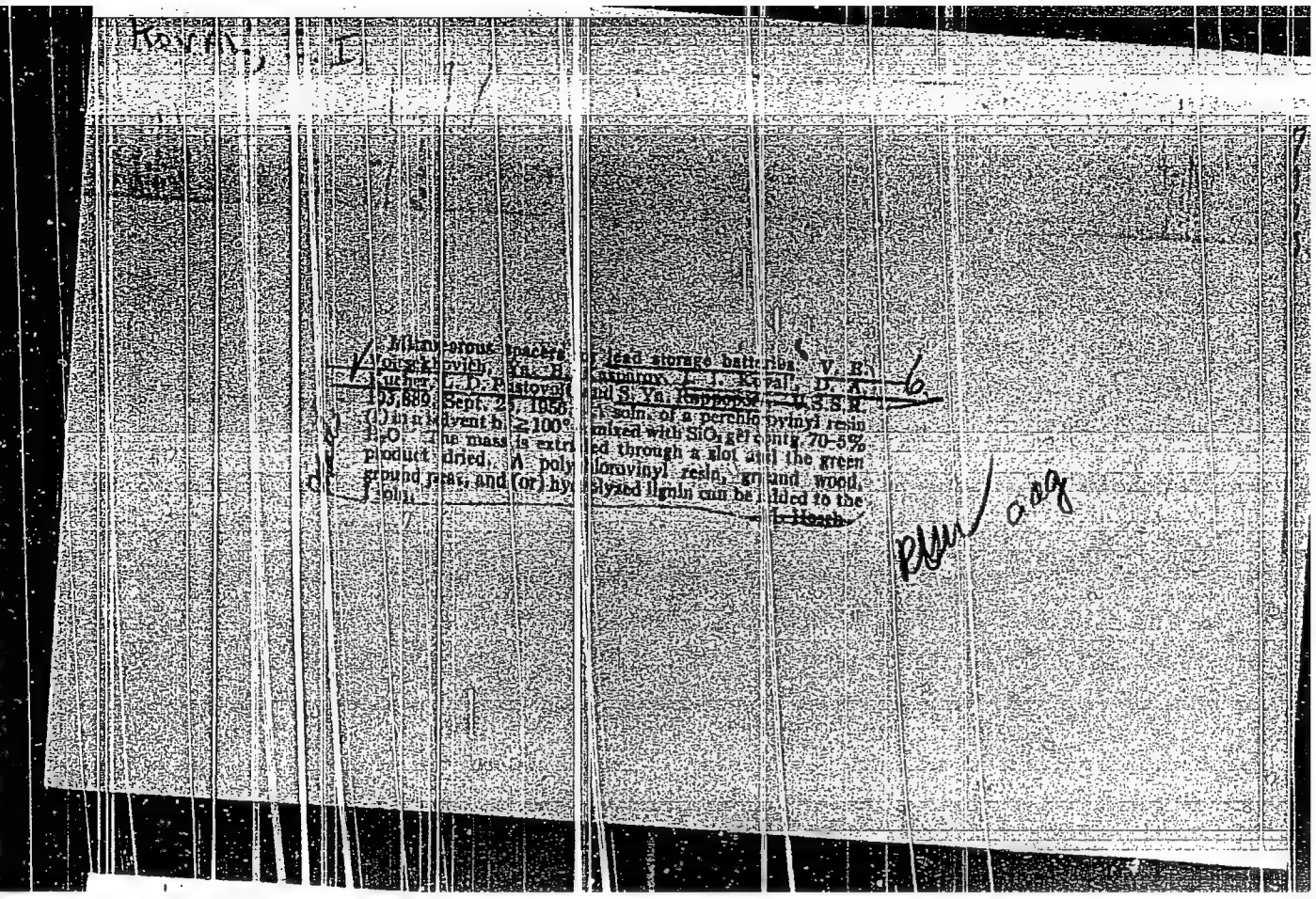
KOVAL, I.I. (Dnepropetrovsk)

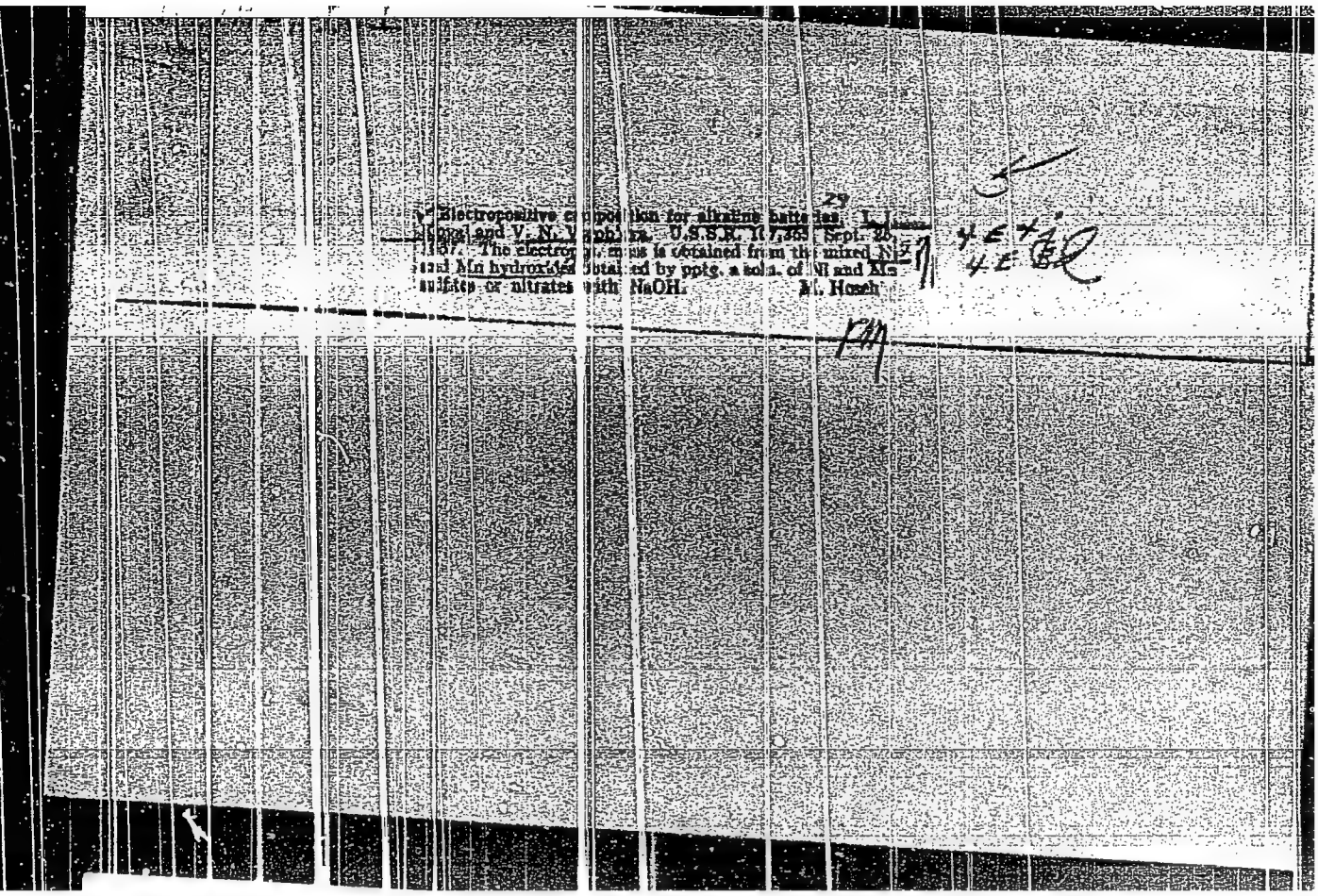
Synthomycin and furacillin bandages in the treatment of lip wounds. Fel'd. i akush. 24 no.7:41 Jl '59. (MIRA 12:10)
(LIPS--WOUNDS AND INJURIES) (CHLORONYCETIN) (FURALDEHYDE)

KOVAL', I.I., assistent; LITVINOV, V.N.

Administration of inhalation anesthesia during automatic artificial respiration. Nov. khir. arkh. no.12:87-89 D '61. (MIRA 14:12)

1. Kafedra fakul'tetskoy khirurgii (zav. - prof. M.A. Kimbarovskiy) Dnepropetrovskogo meditsinskogo instituta.
(ARTIFICIAL RESPIRATION)
(ANESTHESIOLOGY--APPARATUS AND INSTRUMENTS)





Electropositive [illegible] for alkaline batteries. L. [illegible] Nogel and V. N. [illegible]. U.S.S.R. 117,383 Sept. 25, 1957. The electrolyte is obtained from the mixed Ni and Mn hydroxides obtained by ppts. a soln. of Ni and Mn sulfates or nitrates with NaOH. M. Hosch

Koval', I.I.

AUTHORS: Koval', I.I., Candidate of Technical Sciences, and Vorob'yeva, V.N., Engineer. 110-4-15/25

TITLE: The Use of Manganese Oxides in Alkali Accumulators (Ispol'zovaniye okislov margantsa v shchelochnykh akkumulyatorakh)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, No. 4, pp. 47 - 49 (USSR).

ABSTRACT: Alkaline accumulators have various advantages but compared with lead accumulators they have inferior electrical characteristics per unit volume and weight. This is because the active mass in alkaline accumulators is screened by iron which impairs the electrical properties, particularly at low temperatures and high charging currents.
In recent years, plates have been developed that are made of carbonyl nickel powder pressed in moulds and sintered in hydrogen. The pores of the plates are then filled with active material. The characteristics of these alkaline (cadmium-nickel) accumulators, per unit volume and weight, are as good as and sometimes better than those of lead accumulators. Development has been retarded by the shortage and high cost of nickel and attempts have accordingly been made in many countries to use iron instead of nickel as a basis for the plates. In the negative plates of nickel-iron accumulators, the iron itself is active. When used in the positive plates, it must be passivated by the addition of suitable metal or oxide. One such metal is manganese.
Another way of economising nickel is for the nickel oxide in the active mass to be replaced, at least in part, by another oxide, for example, manganese. It might be expected that manganese would dissolve in the electrolyte and be deposited on the negative electrode. No account seems to have been published of the secondary operation of an oxide-manganese electrode in an alkali electrolyte solution. Little work has been done on cathodic polarisation of an electrode of manganese dioxide in solutions of alkali electrolytes. Experiments by P.D. Lukovtsev and his colleagues indicated that in nickel and manganese oxide electrodes, active oxygen occurs as a solution in the solid phase; its concentration and rate of diffusion govern the electrode potential. The present authors have suggested that operation of an oxide-manganese electrode in an alkali electrolyte solution should be reversible. If manganese oxides are used as the active material for the positive electrode of an alkaline accumulator, they would also passivate the iron.
The experimental procedure is described. The electrode basis

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was nickel, which is almost passive; moreover, very porous electrodes can be made of nickel powder sintered in a reducing atmosphere. The nickel electrodes were in an excess electrolyte solution between auxiliary electrodes of pure ion. The bath was thermostatically controlled at temperatures accurate to ± 1°C. Electrode potentials were measured by the usual compensation method.

When nickel electrodes are used it is found that the battery capacity depends upon the anion of the nickel salt that is used to impregnate the plates; therefore the influence of the manganese salt anion was investigated. The results are plotted in the form of curves of the coefficient of utilisation of manganese against the number of cycles of charge and discharge. Capacity calculations were based on a charge to 0.28 V. It will be seen that the coefficient of utilisation of manganese greatly depends on the anion; obviously, basic salts are formed and the sulphate ion has the same negative effect as in an oxide-nickel electrode. The discharge current density was found to have no effect on the coefficient of utilisation of manganese at current densities of up to 25 mA/cm^2. As the concentration of the electrolyte is raised, the coefficient of

The Use of Manganese Oxides in Alkali Accumulators 110-4-15/25

utilisation of manganese during discharges rises, but the discharge potential of the electrode drops. Figures are given for the influence of the discharge current density on the performance. When the temperature is reduced from + 20 to -20 °C, the utilisation of the metal decreases by a factor of 1.5. At -40 °C, the oxide-manganese electrode does not operate.
There is 1 figure.

ASSOCIATION: VNIIT

SUBMITTED: September 20, 1957

AVAILABLE: Library of Congress

Card 4/4

110-58-6-10/22

AUTHORS: Koval', I.I., Candidate of Technical Sciences and Vorob'yeva, V.N., Engineer

TITLE: The Use of Manganese Oxides in Alkali Accumulators (Ispol'zovaniye okislov margantsa v shchelochnykh akkumulyatorakh)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Nr 6 pp 46 - 48 (USSR).

ABSTRACT: In the previous article, published in Vestnik Elektropromyshlennosti, 1958, Nr 4, it was shown that a manganese-oxide electrode, prepared by deposition of manganese monoxide hydrate from its salts, acts as a secondary electrode but with very poor utilisation of the metal. The next step was to investigate a manganese-oxide/nickel electrode. The procedure was as before: the porous nickel electrodes were impregnated with combined solutions of salts of manganese and nickel in the metal ratios of 3:1, 1:1 and 1:3 . The control electrodes were manganese oxide and nickel oxide. The volt-ampere characteristics were determined after five charge/discharge cycles. With anode polarisation on the first charge, the charge was 1 1/2 times the rated discharge capacity and in subsequent charges 1 1/2 times the actual discharge. The results are given in Table 1 and the potential values during cathode polarisation in Figure 1. The

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experimental conditions were a charging current of 10 ma/cm^2, a discharge current of 5 ma/cm^2, a KOH solution specific gravity of 1.19 and a temperature of 20 °C.
It is seen that when the active mass is prepared from the metallic sulphates, the addition of nickel is ineffective but if the nitrates are used the addition of nickel up to 25% much improves the utilisation of the manganese, which approximates to that of nickel under these conditions. The influence of the rate of charge was studied, with the results given in Table 2; up to 25 ma/cm^2 the discharge current has little influence on the utilisation of the manganese. Data on electrolyte concentration is given in Table 2, showing that when the nickel content is raised, an increased concentration of KOH is more effective in improving the metal utilisation. The results of discharge tests are given in Table 3 and Figures 3 and 4, showing good results up to 100 ma/cm^2. The effect of temperature is shown in Table 4 and Figure 5, indicating that as the temperature is reduced utilisation of the metal decreases slightly; at -40 °C, the discharge potential falls by 0.07 V. Investigations of the effect of electrolyte composition were made in solution of KOH and NaOH with density 1.19 at 20 °C, with

the results given in Table 5. If the manganese content is over 50%, NaOH is not so advantageous as KOH.
Life-tests are being run on accumulators with various amounts of manganese in the plates and a study is being made of the mechanism of operation of a pure manganese-oxide electrode and also of a manganese-oxide/nickel electrode. The addition of manganese is considered to be of practical interest.
There are 5 figures, 5 tables and 1 Soviet reference.

ASSOCIATION: VNIIT
SUBMITTED: March 14, 1958

Card 3/3 1. Electrodes---Materials 2. Manganese oxides---Applications

KOVAL I. I.

GITTIN, M. B.

PHASE I BOOK EXPLOITATION SOV/2216

5(4)

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor, S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor, Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.A. Tedoradze, Doctor of Chemical Sciences; Ed.: T.A. Prusakova.

Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodeposition and industrial electrolysis. Abridged discussions are given at the end of each item. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Fierov, V. N. (Gor'kovskiy politekhnicheskiy institut imeni

Card 30/34

SOV/110-59-4-17/23

AUTHORS: Koval' I.I. (Candidate of Technical Sciences) and Barilenko V.I. (Engineer)

TITLE: Increasing the Service Life of Lead-Acid Accumulators (Ob uvelichenii sroka sluzhby svintsovykh akkumulyatorov)

PERIODICAL: Vestnik Elektropromyshlennosti, 1959, Nr 4, pp 60-64 (USSR)

ABSTRACT: The service life of modern accumulators is usually governed by the life of the positive plates. If the service is such that the accumulator is deeply discharged the active mass usually fails. If discharge is not deep and is usually followed by overcharging the grid fails first. Systematic operation at high electrolyte temperatures causes accelerated corrosion of the positive plate grids. This article considers only improvement of the life of the active mass. In service the active mass of positive plates is gradually softened and falls off, and this can be prevented to some extent by the use of glass-felt separators, though these have certain disadvantages. The authors concluded that most of the difficulties result from the formation during discharge of coarse crystals of lead sulphate, promoted by low acid concentration. In recent years Soviet electro-chemists (B.N.Kabanov, A.K.Lorents, E.I.Krepakova, Ya.B.Kasparov,

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Increasing the Service Life of Lead-Acid Accumulators

E.V.Krivolapova and others) have established that the presence of even small quantities of barium sulphate in the active mass of the positive plates promotes softening, particularly when the accumulator is deeply discharged. As barium sulphate is used in the paste for the negative plates, it might sometimes get into the paste for the positive plates. The authors studied the effect of adding barium sulphate so as to understand better the mechanism of softening of the active mass on positive plates. The work suggested that one method of increasing the life of the active mass is chemically to reduce the dioxide with the formation of large crystals of lead sulphate. During the next charging period, the large crystals of sulphate are converted to lead dioxide of strong structure. Reducing agents were introduced into accumulators of 7 ampere hours nominal rating after 90 operating cycles with the accumulators in both charged and discharged conditions. In all cases the use of reducing agents increased the life of the accumulators. The most effective reducing agent was hydroxyalamine. Accumulators were tested in which the positive plates were treated with

Increasing the Service Life of Lead-Acid Accumulators

solutions of hydroxyalamine in sulphuric acid before assembly in the charged condition and other accumulators were made up, and charged and discharged before treatment with reducing agent. The results of life tests on treated accumulators are given in Table 1, from which it will be seen that a 1% solution of reducing agent considerably increases the life. If the concentration is greater than 1% the accumulator capacity is greater at first but the life is short because the grids are corroded more rapidly. Tests were also made on the use of reducing agents of different concentrations on plates operating in excess sulphuric acid, and the test results are given in Table 2. The main conclusion is that the reducing agent works very rapidly. To determine the degree of reduction of lead dioxide the active mass was analysed after treatment with different concentrations of hydroxyalamine in sulphuric acid and the results are given in Table 3. If the concentration of reducing agent is too high the degree of reduction is less, apparently because the surface pores become blocked and it is more difficult for the reducing agent to diffuse into the

Increasing the Service Life of Lead-Acid Accumulators

inner layers of the active mass. The formation of large crystals of lead sulphate as a result of using reducing agent will be seen from the microphotographs given in Fig 1. The next tests were made with hydroxyalamine in concentrations of 0.5 and 2.5% using medium sized accumulators. Life tests were made on the accumulators and hydroxyalamine was introduced into the discharged accumulators after 25, 50 and 100 operating cycles. The normal acid solution was replaced by acid solution containing reducing agent. Graphs of accumulator capacity against service life are given in Figs 2 and 3 from which it will be seen that in all cases the use of reducing agents increased the life of the accumulators and the long period capacity of the accumulators was increased, though sometimes the short term capacity was reduced. The use of reducing agent after 50 or 100 cycles either did not alter the capacity or reduced it somewhat. Tests were made to confirm that where capacity increase occurred it was not as a result of the corrosion of the grids. For this purpose, platinum grids were used for the tests, the results of which are given in Fig 4, in which the increase

Increasing the Service Life of Lead-Acid Accumulators

in capacity after inclusion of hydroxyalamine is evident. The results of another test using a platinum grid are given in Fig 5, and here too hydroxyalamine has increased the capacity. It is concluded that using the optimum hydroxyalamine concentration of 0.5 - 1% weight, the increase in the life of positive plates of lead accumulators is up to 30%. The capacity of the positive plates is increased by the use of reducing agents and this is not a result of corrosion of the grid. It is recommended to add hydroxyalamine into the electrolyte after the accumulator has operated for 70 - 100% of the guaranteed working life. Hydroxyalamine can be introduced into the accumulator to increase the capacity after about 25% of the guaranteed working life. There are 5 figures and 3 tables.

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S/110/60/000/002/002/005
E021/E455

AUTHORS: Koval', I.I., Candidate of Technical Sciences and Barabanenko, V.I., Engineer

TITLE: Possible Ways of Improving the Service Life of Lead Accumulators

PERIODICAL: Vestnik elektropromyshlennosti, 1960, No.2, pp.43-46

TEXT: The effects on the positive plates of additions of sodium thiosulphate, methylene blue and hydrogen peroxide have each been studied. Plates 98 x 64 x 1.8 mm were pasted with production paste and tested in excess electrolyte. 1, 5 and 10% additions (by weight of 1.285 acid) of sodium thiosulphate were added to the charged cells after the tenth charge and 1 and 5% additions after the tenth discharge. The 1, 5 and 10% additions decreased the capacity by 7, 30 and 50% respectively on the subsequent discharge. In all cases, however, the service life of the plates was extended. For instance, the 5% additions gave a 70% increase against a standard. 1 and 5% additions of sodium thiosulphate were also

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S/110/60/000/002/002/005
E021/E455

Possible Ways of Improving the Service Life of Lead Accumulators

made to CT-140 (ST-140) accumulators. The capacity and the service life were somewhat increased over long discharges. With short discharge durations, however, the 5% additions caused a decrease in capacity. Similar tests with additions of methylene blue showed that a 1% addition to the charged cell lowered the capacity of the positive plate on the first discharge, but thereafter the capacity returned to normal. There was a 30% increase in life. Tests with ST-140 accumulators showed that a 1% addition of methylene blue after 100 cycles increased the capacity on both long and short discharge durations. It was shown that, in common with the other reducing agents, hydrogen peroxide caused a loss of capacity. Yet it did not increase the service life of positive plates. Thus, it was thought that changes in the size and shape of the lead sulphate formed might be responsible for the increase in life. This was checked by growing crystals of lead sulphate from lead nitrate. In the presence of sodium thiosulphate and methylene blue, coarse

KOVAL', I.I., brigadir traktornoy brigady; GERASIMCHIK, V.G. [Herasymchyk, V.H.], nauchnyy sotrudnik

We introduce over-all mechanization. Mekh. sil'. hosp. 14 no.3:4-7 Mr '63. (MIRA 17:1)

1. Kolkhoz "Kommunar", Kagarlitskogo rayona Kiyevskoy obl. (for Koval'). 2. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for Gerasimchik).

KOVAL', I.

Some results of observing Mars during the 1954 opposition. Astron. tsir. no.159:9-11 My '55. (MIRA 8:12)
(Mars (Planet))

KOVAL', I.K.

Results of observations of Mars during the opposition of 1954.
TSir.Astron.obser.Khar.un. no.15:21-31 '56. (MLRA 10:5)
(Mars (Planet))--Opposition, 1954)

KOVAL, I. K.

BARABASHOV, N.P.; KOVAL', I.K.

Difference in the photographic diameters of Mars photographed in ultraviolet and red light [with summary in English]. Astron.zhur. 33 no.6:890-892 N-D '56. (MLRA 10:1)

1. Astronomicheskaya observatoriya Khar'kovskogo gosudarstvennogo universiteta.
(Mars (Planet)--Diameters) (Astronomical photography)

KOVAL', I.K., Master Phys-Math Sci -- (diss) "The photographic photometry of Mars with color filter." Kuyb'kov, 1957, 10pp. (Min Higher Educ UkrSSR. Astronomical observatory of the Kuyb'kov State University im. A. M. Gor'kogo), 150 copy (KL, No 40, 1957, 90)

KOVAL', I.K.

AUTHOR: Koval', I.K. 33-3-12/32

TITLE: Results of photographic observations of Mars at the Khar'kov Astronomical Observatory during 1954. (Rezultaty fotograficheskikh nablyudeniy Marsa v 1954 g. na Khar'kovskoy Astronomicheskoy Observatorii)

PERIODICAL: "Astronomicheskiy Zhurnal" (Journal of Astronomy), 1957, Vol. 34, No. 3, pp. 412 - 418 (U.S.S.R.)

ABSTRACT: Photographic observations of Mars were carried out in the period June 1 to September 10, 1954 using the 8-inch refractor of the Khar'kov Astronomical Observatory. It was found that the formulae of Sobolev (5), Fesenkov (6) or Schonberg (7) could be used with equal success for the reduction of observations of Mars. Four filters were used: red (640 mμ), yellow (580 mμ), green (520 mμ), blue (460 mμ), where the numbers in brackets indicate the wavelengths at maximum transmission.

Brightness distribution curves were obtained for each month of observations. It was found that the slope of these curves in the red and yellow regions decreases with increasing meridian altitude of the sun. This suggests that as the Marsian summer approaches, the scattering of red light by the Marsian atmosphere increases. Evidently, as the summer approaches

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Results of photographic observations of Mars at the Kharkov Astronomical Observatory during 1954. (Cont.)

in the southern hemisphere, the amount of dust in the Marsian atmosphere increases.

The absence of differences in colour between the majority of the "seas" and "continents" on Mars, which were observed by various workers during the opposition in 1954, is now confirmed and can, evidently, be ascribed to seasonal state of the southern hemisphere (winter-spring) of Mars during the observations.

The colour of some of the Marsian "seas" depends on the meridian altitude of the sun. As the latter increases the "seas" darken (the albedo falls for all wavelengths), and some of them become less red in comparison with the "continents". It may be assumed that as the Marsian summer approaches, the polar cap melts into the "seas" and that parts of some of these "seas" are occupied by Marsian vegetation. N.P. Barabashov came to similar conclusions on the basis of his work at the Kharkov Astronomical Observatory.

The smoothness factor has different values for the "seas" and the "continents" but is independent of wavelength. This indicates structural differences on the surface of the "seas" and "continents" respectively. The reflection of light by the Marsian "seas" is not in accordance with Lambert's law. The